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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED

MARCH 1964

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 235
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
31 Mar. 1964

SOLAR - GEOPHYSICAL DATA

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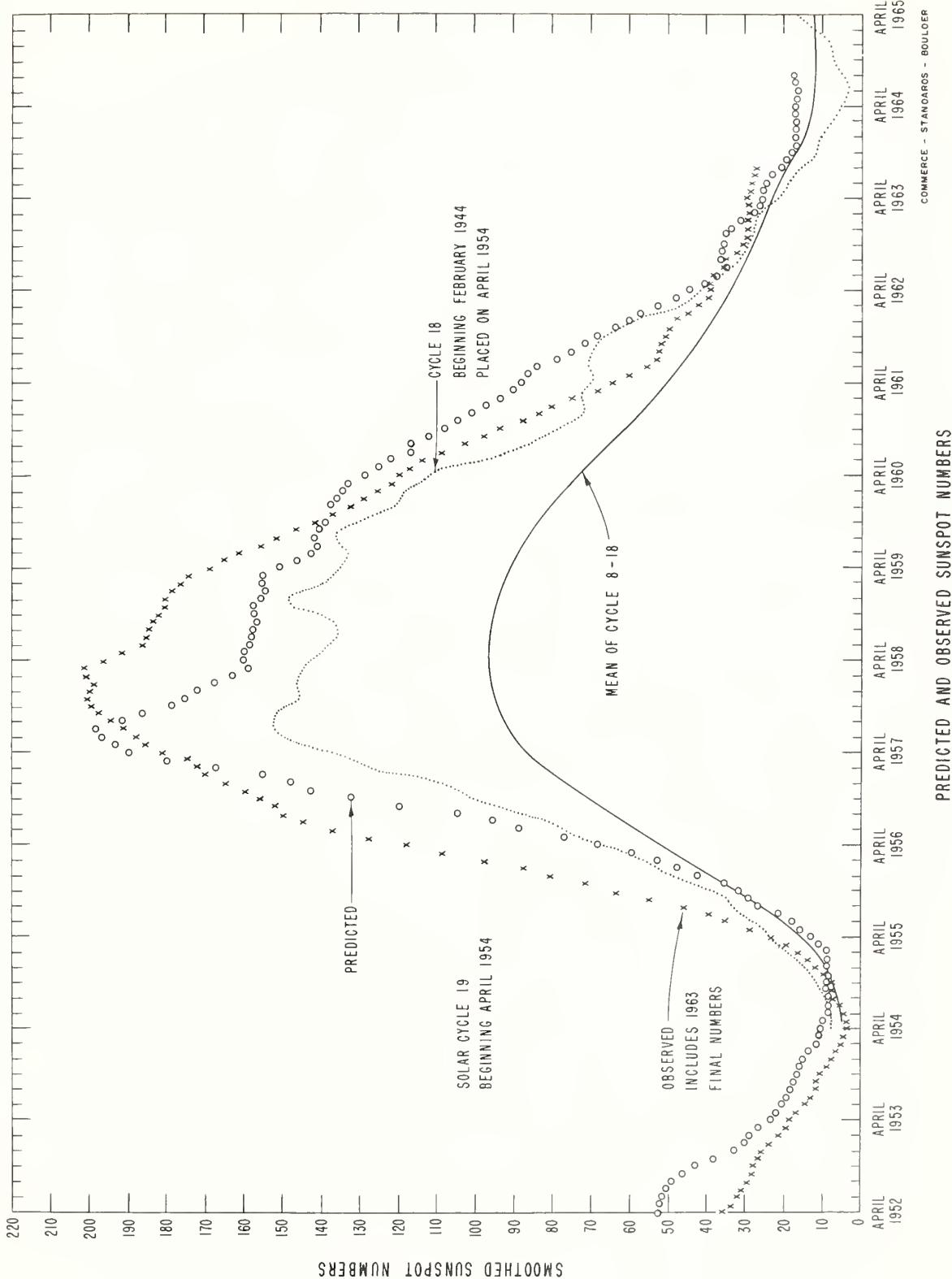
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The descriptive text was republished November, 1963.

DAILY SOLAR INDICES

Jan. 1964	American Relative Sunspot Numbers R _A ^t	Feb. 1964	Zürich Provisional Relative Sunspot Numbers R _Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	0	1	0	73
2	1	2	0	72
3	0	3	0	71
4	1	4	0	71
5	7	5	0	72
6	19	6	0	73
7	20	7	10	72
8	16	8	13	73
9	4	9	20	72
10	4	10	8	73
11	6	11	0	72
12	6	12	0	73
13	19	13	0	73
14	25	14	8	73
15	25	15	15	73
16	11	16	16	73
17	2	17	16	74
18	1	18	8	76
19	10	19	8	76
20	16	20	23	76
21	14	21	39	79
22	14	22	41	80
23	12	23	54	84
24	14	24	44	85
25	14	25	30	84
26	13	26	34	87
27	14	27	30	85
28	26	28	34	84
29	24	29	23	81
30	17	30		
31	4	31		
Mean:	11.6	Mean:	16.3	76



ZURICH FINAL RELATIVE SUNSPOT NUMBERS

1963

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	23	30	0	15	23	31	30	65	20	0	45	28
2	29	25	0	25	22	26	22	55	25	7	52	31
3	34	44	8	28	24	15	37	53	34	9	43	30
4	35	53	14	17	20	13	22	51	43	8	37	30
5	23	47	22	23	26	23	9	50	42	0	29	28
6	8	50	32	50	43	8	9	53	31	15	13	25
7	7	48	35	50	46	29	9	38	9	20	10	17
8	8	40	29	63	55	54	10	23	14	32	11	13
9	7	32	32	55	48	68	17	22	15	37	9	32
10	8	21	34	59	64	82	9	20	23	32	0	27
11	8	18	23	48	64	82	10	9	22	40	8	26
12	8	16	18	63	55	87	10	0	28	39	11	18
13	9	9	17	56	54	82	18	7	40	42	7	10
14	33	16	24	45	56	57	22	13	65	51	7	8
15	44	17	15	50	65	54	19	11	84	49	9	7
16	40	16	8	50	66	33	11	18	85	52	16	7
17	40	18	13	41	76	27	11	29	81	50	24	8
18	21	16	19	34	78	25	13	43	73	40	28	17
19	20	20	12	28	68	23	15	36	72	29	25	15
20	16	20	13	19	58	19	11	36	73	37	28	17
21	16	20	13	10	49	19	19	50	77	35	30	14
22	7	20	16	0	37	7	19	68	70	45	34	13
23	17	22	17	0	24	15	25	64	54	50	36	9
24	15	20	19	0	28	24	17	50	38	51	35	16
25	17	16	10	0	18	29	25	37	25	53	32	8
26	7	11	16	0	9	34	16	29	13	52	23	7
27	14	17	15	0	18	31	23	16	0	38	23	0
28	34	0	7	7	36	24	7	21	9	24	21	0
29	25		12	16	32	30	24	16	0	54	27	0
30	23		17	26	37	27	55	23	0	58	28	0
31	18		19		35		65	24		45		0
Mean	19.8	24.4	17.1	29.3	43.0	35.9	19.6	33.2	38.8	35.3	23.4	14.9

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CALCIUM PLAGE AND SUNSPOT REGIONS

IIa

FEBRUARY 1964

Feb. 1964	LAT.	MCMATH PLAGE NUMBER	RETURN OF REGION	CALCIUM PLAGE DATA						SUNSPOT DATA		
				CMP VALUES		HISTORY	AGE (ROTA- TIONS)	DATE FIRST SEEN(L)	DURA- TION (DAYS)	CMP VALUES		HISTORY
				AREA	INT					AREA	COUNT	
Jan.												
31.0	S23	7127 (2)	New	(300)	(1)	b - l	1	2/5	1			
31.8	S35	7116 (2)	New	(100)	(2)	b - d	1	1/28	1			
Feb.												
01.0	N28	7120	New	300	1.5	b / l	1	1/29	7			
01.1	N13	7132 (2)	New	(200)	(1)	b - i	1	2/5	1			
03.2	N45	7124 (2)	New	200	1.5	b - d	1	2/4	1			
03.5	N20	7122	7095	100	1.5	l / i	8	1/29	10			
03.8	N04	7121	New	600	1.5	l / l	1	1/29	11			
03.8	S21	7128 (2)	New	200	2	b - d	1	2/5	1			
05.6	S09	7133	New	400	3	b / i	1	2/6, 7	5			
05.7	N08	7134	New	400	2	b / d	1	2/7	2			
06.1	N27	7135	New	300	2	b \ d	1	2/7	3			
06.1	N47	7125 (2)	New	100	2	b - d	1	2/4	1			
06.7	N09	7129	New	300	1	b / d	1	2/5	3			
07.2	N01	7131 (2)	New	200	2	b - d	1	2/5	1			
07.7	S20	7136	New	200	1.5	b / d	1	2/7	2			
09.6	N16	7126	New	(200)	(2)	l - d	1	2/3	3			
09.7	N05	7144	New	100	2	b \ d	1	2/10	3			
10.1	N31	7140 (2)	New	100	2	b - d	1	2/9	1			
10.3	S10	7149	New	(200)	(1.5)	b \ l	1	2/14	2			
10.1	S05	7137 (2)	New	(400)	(2.5)	b - d	1	2/7	1			
10.5	S15	7146 (2)	New	300	1	b - d	1	2/11	1			
10.7	N11	7130	7102	400	2	l \ d	6	2/4	≥9			
10.7	S11	7145 (2)	New	100	1.5	b - d	1	2/10	1			
11.3	N20	7141	New	200	1.5	b - d	1	2/9	2			
11.4	S29	7142 (2)	New	100	2	b - d	1	2/9	1			
11.9	S15	7148 (2)	New	100	1.5	b - d	1	2/12	1			
12.3	S08	7138 (2)	New	(400)	(1.5)	b - d	1	2/7	1			
12.7	N10	7139	(3)	400	1.5	l / d	6	2/≤7	>10			
12.6	S28	7143 (2)	New	(100)	(2)	b - d	1	2/9	1			
12.7	N26	7150	New	100	2	b \ l	1	2/14	4			
13.9	N02	7147	(4)	500	1.5	b / i	1	2/11	>7			
14.5	S15	7156 (2)	New	(200)	(1.5)	b - l	1	2/17	1			
15.8	N04	7157 (2)	New	200	1.5	b - d	1	2/17	1			
17.3	N08	7151	New	600	1.5	b \ d	1	2/14	≥4			
18.9	S39	7158 (2)	New	200	1.5	b - d	1	2/17	1			
19.6	S09	7152	New	(300)	(1.5)	l - d	1	2/14	≥7			
20.8	N16	7155 (2)	New	(200)	(2)	b - d	1	2/16	1			
20.9	S06	7153	7113	1400	3	l / l	2	2/14	13	60	1	l \ .
21.7	N09	7154	7108	2100	3.5	l / l	2	2/14	14	160	5	b \ ?
22.6	N13	7170 (2)	New	(200)	(2.5)	b - l	1	2/28	1			
22.6	S19	7159 (2)	New	(100)	(2)	l - d	1	2/17	1			
23.9	N02	7168	New	(400)	(2.5)	b / l	1	2/26	4	50	1	b / .
24.0	S01	7160 (2)	New	(200)	(1.5)	b - d	1	2/20	1			
24.5	N08	7161	7115	2500	3.5	b / l	1	2/20	11	570	12	b / .
25.6	N12	7169 (2)	New	(100)	(1.5)	b - d	1	2/27	1			
26.3	S12	7166	New	400	1.5	b / d	1	2/24	2			
26.9	N09	7162	New	(300)	(1)	l - d	1	2/21	2			
27.9	S09	7163	New	(200)	(1.5)	b - d	1	2/23	2			
28.0	S03	7172	New	(600)	(1.5)	b \ d	1	2/29	2			
29.0	N25	7164	(5)	800	2	l \ d	1	2/23	13			
29.7	S05	7165	New	(200)	(1)	l - d	1	2/23	3			

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- (1) Due to inclement weather conditions, no calcium plage data were secured at the McMath-Hulbert Observatory on February 6, 13, 18 and 19.
- (2) These very small and ephemeral plages last for only one day.
- (3) Part of 7104.
- (4) New - in same position as old 7105.
- (5) New - in position of 7120.

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

FEBRUARY 1964

Feb. 1964	TIME MEAS. UT	LAT	MER DIST	TYPE	Feb. 1964	TIME MEAS UT	LAT	MER, DIST	TYPE
1-6	No Spots				24	1630	S04 N10 N07	W56 W42 W03	αp $\beta\gamma$ β
7	1640	S08	W25	β					
8	1715	S09	W40	βp	25-26	No Obs.			
9	2155	S08	W57	βp	27	1620	N02 N09	W47 W44	β βp
10	1805	S07	W69	β	28	1810	N02 N10 N06 S07	W63 W58 E25 E45	βf βp αp αp
11-13	No Spots								
14-20	No Obs.								
21	1640	S04 N10 N08	W16 W01 E41	αp β αp	29	1810	N02 N10 N06 N07	W78 W76 E11 E32	αf αp αp αp
22-23	No Obs.								

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PROVISIONAL CORONAL LINE EMISSION INDICES

FEBRUARY 1964

CMF Feb 1964	North East quadrant (observed 7 days earlier)				South East quadrant (observed 7 days earlier)				South West quadrant (observed 7 days later)				North West quadrant (observed 7 days later)				
	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	G ₆	G ₁	R ₆	R ₁	
1	x	7	x	x	x	4	x	x	x	5	x	x	x	x	8	x	x
2	5	11	10	12	3	5	8	12	19	20	16	14	16	12	11	16	16
3	x	x	19a	27a	x	x	x	20a	29a	20	18	16	15	10	12	11	20
4	5	8	21	24	3	6	3	18	22	22	20a	23	26	8	x	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	14	11	16	x	x	x	x	x	7	9	9	12	17	16	13	16
9	12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
14	12	15	9	12	x	x	x	x	x	16	18	18	18	12	13	16	16
15	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
16	10	17	13	16	3	5	11	14	14	11	14	14	12	18	4	4	13
17	9	17	17	26	4	6	14	15	15	14	15	15	12	18	x	x	x
18	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	29	50	31	57	19	64	31	76	8	76	76	76	76	88a	5	9	83a
21	x	x	x	x	x	x	x	x	x	12	14	14	12	28	33	38	46a
22	26	53	18	23	7	11	12	14	14	11	14	14	12	41	33	61	80
23	15	28	17	24	4	5	14	17	17	15	17	17	14	19	36	x	x
24	5	10	8	12	3	3	8	9	9	9	9	9	9	x	x	x	x
25	7	12	16	40	3	3	5	9	14	x	x	x	x	x	x	x	x
26	6	15	22	4	6	10	14	x	x	x	x	x	x	x	x	x	x
27	x	x	x	x	x	x	x	x	x	5	6	5	6	x	x	x	x
28	9	21	12	24	3	5	8	10	8	4	8	7	8	x	x	x	x
29	19	24	22	42	21	24	4	8	x	x	x	x	x	x	x	x	x

x = no observations

* = yellow line emission

a = index computed from low weight data

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SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE FEB 1964	OBSERVED UNIVERSAL TIME		MAX PHASE	APPROX. LAT.	APPROX. MER DIST	LOCATION McMATH REGION	DURA- TION MINUTES	IM- POR- TANCE	OBS COND.	TIME U.T.	MEASUREMENTS		PROVISONAL IONOSPHERIC EFFECT	
		START	END									MEAS AREA Sq. Deg.	CORR AREA Sq. Deg.		
ATHENES	01	0515	0805	NO FLARE	PATROL										
	01	1110	1315	NO FLARE	PATROL										
	01	2355	2400	NO FLARE	PATROL										
	02	0030	0815	NO FLARE	PATROL										
	02	1005	1015	NO FLARE	PATROL										
	02	1110	1300	NO FLARE	PATROL										
	03	0035	0205	NO FLARE	PATROL										
	03	0235	0330	NO FLARE	PATROL										
	03	0430	0810	NO FLARE	PATROL										
	03	0850	1010	NO FLARE	PATROL										
	03	1050	1400	NO FLARE	PATROL										
	03	1620	1625	NO FLARE	PATROL										
	03	1945	2340	NO FLARE	PATROL										
	04	0050	0110	NO FLARE	PATROL										
	04	0220	0810	NO FLARE	PATROL										
	04	1154	E	0845	NO FLARE	PATROL									
	04	1220	1211	1155	N48 E17										
	04	1505	1435	NO FLARE	PATROL										
	04	1535	1515	NO FLARE	PATROL										
	04		2400	NO FLARE	PATROL										
	05	0000	0035	NO FLARE	PATROL										
	05	0050	0130	NO FLARE	PATROL										
	05	0140	0630	NO FLARE	PATROL										
	05	0935	1000	NO FLARE	PATROL										
	05	1140	1145	NO FLARE	PATROL										
	05	1200	1300	NO FLARE	PATROL										
	05	1410	1420	NO FLARE	PATROL										
	05	2105	2115	NO FLARE	PATROL										
	05	2355	2400	NO FLARE	PATROL										
	06	0115	0130	NO FLARE	PATROL										
	06	0220	0730	NO FLARE	PATROL										
	06	1030	1245	NO FLARE	PATROL										
	06	1820	1910	NO FLARE	PATROL										
	06	2005	2025	NO FLARE	PATROL										
	06	2105	2115	NO FLARE	PATROL										
	06	2145	2340	NO FLARE	PATROL										
	07	0200	0230	NO FLARE	PATROL										
	07	0625	0715	NO FLARE	PATROL										
	07	0740	0755	NO FLARE	PATROL										
	07	0920	0930	NO FLARE	PATROL										
	07	0950	1000	NO FLARE	PATROL										
	07	1005	1020	NO FLARE	PATROL										
	07	1030	1115	NO FLARE	PATROL										
	07	1125	1300	NO FLARE	PATROL										
	07	1310	1410	NO FLARE	PATROL										

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE		OBSERVED UNIVERSAL TIME		LOCATION		IM PLATE REGION	DURA- TION MINUTES	OBS. COND.	MEASUREMENTS			PROVISIONAL IONOSPHERIC EFFECT
	START	END	APPROX. LAT.	MAX. PHASE	MER DIST	MEAS AREA Sq. Deg.				MEAS AREA Sq. Deg.	MEAS AREA Sq. Deg.	MAX. WIDTH Hs	
ARCETRI MANILA	08	0325	0530	NO FLARE	PATROL				1-	2	0900	*60	
	08	0625	0725	NO FLARE	PATROL	508 W35			1-	2	0839	*33	
	08	0834	0848	0839	PATROL	508 W33							
	06	1005	1255	NO FLARE	PATROL								
	08	2355	2400	NO FLARE	PATROL								
	09	0000	0105	NO FLARE	PATROL								
	09	0120	0600	NO FLARE	PATROL								
	09	0725	0734	0728	N19 E28								
	09	1100	1300	NO FLARE	PATROL								
	10	0130	0155	NO FLARE	PATROL								
MANILA	10	0215	0615	NO FLARE	PATROL								
	10	0700	0810	NO FLARE	PATROL								
	10	0835	0840	NO FLARE	PATROL								
	10	1005	1015	NO FLARE	PATROL								
	10	1025	1135	NO FLARE	PATROL								
	10	1140	1250	NO FLARE	PATROL								
	10	1907	1925	1917	SOC W75								
	10	2000	2055	NO FLARE	PATROL								
	10	2101	2109	2103	N08 E00								
	10	2101	2118	2105	N04 E00								
SAC PEAK LOCKHEED	11	0145	0215	NO FLARE	PATROL								
	11	0330	0700	NO FLARE	PATROL								
	11	0830	0835	NO FLARE	PATROL								
	11	0840	0915	NO FLARE	PATROL								
	11	1000	1235	NO FLARE	PATROL								
	11	1335	1435	NO FLARE	PATROL								
	11	1715	2355	NO FLARE	PATROL								
	12	0435	0435	NO FLARE	PATROL								
	12	0455	0540	NO FLARE	PATROL								
	12	0915	0930	NO FLARE	PATROL								
	12	0955	1300	NO FLARE	PATROL								
	12	1735	1745	NO FLARE	PATROL								
	12	1800	1805	NO FLARE	PATROL								
	12	1810	1903	NO FLARE	PATROL								
	12	2155	2400	NO FLARE	PATROL								
SAC PEAK LOCKHEED	13	0000	0015	NO FLARE	PATROL								
	13	0030	0120	NO FLARE	PATROL								
	13	0150	0505	NO FLARE	PATROL								
	13	0530	0545	NO FLARE	PATROL								
	13	0600	0610	NO FLARE	PATROL								
	13	0640	0650	NO FLARE	PATROL								
	13	1030	1110	NO FLARE	PATROL								
	13	1200	1220	NO FLARE	PATROL								
	13	1225	1320	NO FLARE	PATROL								
	13	1325	1330	NO FLARE	PATROL								

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE FEB 1964	OBSERVED UNIVERSAL TIME		APPROX. LAT.	APPROX. MERC. DIST.	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUREMENTS			MAX. WIDTH HO	MAX. INT. %	PROVISONAL IONOSPHERIC EFFECT
		START	END							MCMATH PLACE REGION	CORR. AREA Sq Deg.	MEAS. AREA Sq Deg.			
		13	1355	1355	NO FLARE		PATROL								
		13	2355	2400	NO FLARE		PATROL								
		14	0045	0115	NO FLARE		PATROL								
		14	0455	0615	NO FLARE		PATROL								
		14	0655	0700	NO FLARE		PATROL								
		14	0950	0930	NO FLARE		PATROL								
		14	1110	1115	NO FLARE		PATROL								
		14	1120	1200	NO FLARE		PATROL								
		14	1205	1255	NO FLARE		PATROL								
		14	1325	1330	NO FLARE		PATROL								
CAPRI	S	14	1410	D	1427		NIO E90	7154	17 D	1	1	1	1	1	1
		14	2100	2150	NO FLARE		PATROL								
		14	2155	2330	NO FLARE		PATROL								
		15	0025	0715	NO FLARE		PATROL								
		15	0730	0735	NO FLARE		PATROL								
		15	0745	0820	NO FLARE		PATROL								
		15	0825	0855	NO FLARE		PATROL								
		15	0930	1015	NO FLARE		PATROL								
		15	1030	1045	NO FLARE		PATROL								
		15	1100	1150	NO FLARE		PATROL								
		15	1155	1205	NO FLARE		PATROL								
		15	1210	1235	NO FLARE		PATROL								
		15	1255	1355	NO FLARE		PATROL								
		15	2355	2400	NO FLARE		PATROL								
		16	0050	0545	NO FLARE		PATROL								
		16	0630	0830	NO FLARE		PATROL								
		16	0855	0925	NO FLARE		PATROL								
		16	0950	0950	NO FLARE		PATROL								
		16	1005	1355	NO FLARE		PATROL								
		16	1930	1935	NO FLARE		PATROL								
		16	1950	2000	NO FLARE		PATROL								
		17	0040	0125	NO FLARE		PATROL								
		17	0530	0715	NO FLARE		PATROL								
		17	0815	1245	NO FLARE		PATROL								
		17	1315	1320	NO FLARE		PATROL								
		17	1445	1450	NO FLARE		PATROL								
		17	1455	1500	NO FLARE		PATROL								
		17	1505	1510	NO FLARE		PATROL								
		17	1540	1545	NO FLARE		PATROL								
		17	1555	1610	NO FLARE		PATROL								
		17	1615	1620	NO FLARE		PATROL								
		17	2355	2355	NO FLARE		PATROL								
		18	0640	0700	NO FLARE		PATROL								
		18	0915	1010	NO FLARE		PATROL								
		18	1035	1355	NO FLARE		PATROL								

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE FEB 1964	OBSERVED START		UNIVERSAL TIME END		APPROX. LAT.	MAGNITUDE PLACE	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUREMENTS		MAX. WIDTH HA	PROVISIONAL IONOSPHERIC EFFECT
		ST	ED	END	MAX. PHASE							CORR. AREA SQ. DEG.	MEAS. AREA SQ. DEG.		
MANILA	19	0213	0220	0215	NO 9	E 34			1-		2	0215	•17	•19	
	19	0245	0310	NO FLARE	PATROL										
	19	0410	0510	NO FLARE	PATROL										
SAC PEAK	19	0900	1400	NO FLARE	PATROL										
	19	1709	1728	1717 U	NO 8 E 68				1-						
OTTAWA	20	0615	0645	NO FLARE	PATROL										
	20	1620	1625	NO FLARE	PATROL										
	20	1802	1805 E	1805	NO FLARE	PATROL			1-						
	20	1900	2400	NO FLARE	PATROL										
UCCLE	21	0000	0005	NO FLARE	PATROL										
UCCLE	21	0919	0938	1025	N 10 E 04				1-						
WENDEL	21	1011	1030	1030	N 07 E 47				1-						
ARCETRI	21	1014 E	1036 D	1036	N 07 E 43				1-						
ONDREJOV	21	1015 E	1023 D	1023	N 07 E 45				1+						
UCCLE	21	1017 E	1040	1040	N 08 E 45				22	D					
UCCLE	21	1150	1202	1202	N 09 E 02				8	D					
UCCLE	21	1447	1452	1451	N 11 E 01				23	D					
SAC PEAK	21	1515	1517	1525 U	N 08 E 46				1-						
MCMAH	21	1515	1545	1545	N 07 E 43				1-						
	21	1522	1535	1528	N 08 E 43				1-						
	21	2350	2400	NO FLARE	PATROL										
ARCTRI	22	0330	0715	NO FLARE	PATROL				1-						
ARCETRI	22	0936 E	0941 D	NO FLARE	PATROL				1-						
UCCLE	22	1000 E	1021	1019	N 07 E 29				1-						
UCCLE	22	1016	1021	1019	N 08 E 28				1-						
UCCLE	22	1038	1C42	N 08 E 28				1-							
UCCLE	22	1058	1120	N 08 E 28				1-							
MCMAH	22	1746	1810 D	1755	N 08 E 24				1-						
MCMAH	22	1845	1950	1900	N 08 E 24				7161						
SAC PEAK	22	1858	1927 U	1903	N 08 E 24				1-						
LOCKHEED	22	2203	2230	2230	N 10 E 20				1-						
SAC PEAK	22	2206	2242	2242	N 08 E 21				2215						
LOCKHEED	22	2315	2345	2320	N 10 E 20				1-						
SAC PEAK	22	2315	2353	2319	N 08 E 20				2320						
SAC PEAK	22	2355	2400	NO FLARE	PATROL				1-						
ONDREJOV	23	0050	0630	NO FLARE	PATROL				1-						
ARCETRI	23	0645 E	0830	NO FLARE	PATROL				1-						
LOCKHEED	23	0900 E	1010 D	NO 8 E 19				1-							
LOCKHEED	23	1818	1842	1828	N 08 E 15				1-						
LOCKHEED	23	1932	2003	1940	N 09 E 10				1-						
HUANCAYO	23	1945 E	1955	1945	N 08 E 10				1-						
SAC PEAK	23	2134	2137	2137	N 06 E 12				1-						
LOCKHEED	23	2137	2158	2140	N 07 E 13				1-						
SAC PEAK	23	2227	2255	2237	N 08 E 07				1-						
LOCKHEED	23	2230	2252	2236	N 09 E 09				1-						
	24	0045	0250	NO FLARE	PATROL										

SOLAR FLARES

FEBRUARY 1964

OBSERVATORY	DATE FEB 1964	OBSERVED UNIVERSAL TIME			APPROX. LAT.	MER DIST	IM- PLATE REGION	DURA- TION MINUTES	OBS. COND.	TIME UT	MEASUREMENTS		MAX. INT. H _a	PROVISONAL IONOSPHERIC EFFECT
		START	END	MAX PHASE							MEAS. AREA Sq Deg	CORR. AREA Sq Deg		
MANILLA	24	0330	0600	NO FLARE	PATROL			1-	1	0603	1.00	1.00		
	24	0600	0606 D	NO FLARE	PATROL									
	24	0605	0805	NO FLARE	PATROL									
	24	0830	0910	NO FLARE	PATROL									
	24	1010	1310	NO FLARE	PATROL									
	24	1320	2010	1945	PATROL									
	25	0220	0350	NO FLARE	PATROL									
	25	0405	0615	NO FLARE	PATROL									
	25	0645	0710	NO FLARE	PATROL									
	25	0915	1350	NO FLARE	PATROL									
LOCKHEED	25	1910	2100	NO FLARE	PATROL									
	25	2105	2125	NO FLARE	PATROL									
	26	0005	0320	NO FLARE	PATROL									
	26	0345	0545	NO FLARE	PATROL									
	26	0850 E	1000 D	NO FLARE	PATROL									
	26	0925 E	0955 D	NO FLARE	PATROL									
	26	1005	1345	NO FLARE	PATROL									
	26	1900	2025	NO FLARE	PATROL									
	26	2105	2120	NO FLARE	PATROL									
	26	2150	2400	NO FLARE	PATROL									
ARCETRI	27	0000	0710	NO FLARE	PATROL									
	27	0720	0930	NO FLARE	PATROL									
	27	0935	1130	NO FLARE	PATROL									
	27	1145	1255	NO FLARE	PATROL									
	27	2045	2200	NO FLARE	PATROL									
	27	2355	2400	NO FLARE	PATROL									
	28	0000	0055	NO FLARE	PATROL									
	28	0110	0315	NO FLARE	PATROL									
	28	0320	0815	NO FLARE	PATROL									
	28	0857	0912	NO FLARE	PATROL									
LOCKHEED	27	0904	0908	NO FLARE	PATROL									
	28	0935	0954	NO FLARE	PATROL									
	28	0939	0946	NO FLARE	PATROL									
	28	1145	1150	NO FLARE	PATROL									
	28	1200	1210	NO FLARE	PATROL									
	28	1215	1345	NO FLARE	PATROL									
	28	1352	1445	1410	PATROL									
	28	1405	1423	1414	PATROL									
	28	1405 E	1500	1500	PATROL									
	28	1408 E	1412 D	1412	PATROL									
SAC PEAK	29	0150	1345	NO FLARE	PATROL									
	29	2355	2400	NO FLARE	PATROL									
CAPRI'S														
LOCARNO														
MCMAH														

SOLAR FLARES

FEBRUARY 1961

ATHENES	ATHENES, GREECE	HONOLULU	HONOLULU, USA
BAKOU	PIRKULI, USSR	IKONASAN	KYOTO, JAPAN
CAPETOWN	ROYAL OBSERVATORY,	KIEV KO	KIEV GAO, USSR
	CAPE OF GOOD HOPE	KIEV KV	KIEV UNIVERSITY, USSR
CAPRI F	CAPRI, ITALY (GERMAN)	LOCKHEED	LOS ANGELES, CALIF., USA
CAPRI S	CAPRI, ITALY (SWEDISH)	MCMAHATH	MCMAHAN-BULBERT
CRIMEE	SIMEIZ, USSR	MOSCOW	PONTIAC, MICH., USA
HERSTMONCEAU	ROYAL GREENWICH OBSERVATORY,	MOSCOW-GAISH	MOSCOW, USSR
HAUTE-PROVENCE	HERSTMONCEUX, ENGLAND	NEW SCHAUTINS	NEW SCHAUTINS, FREIBURG, GFR

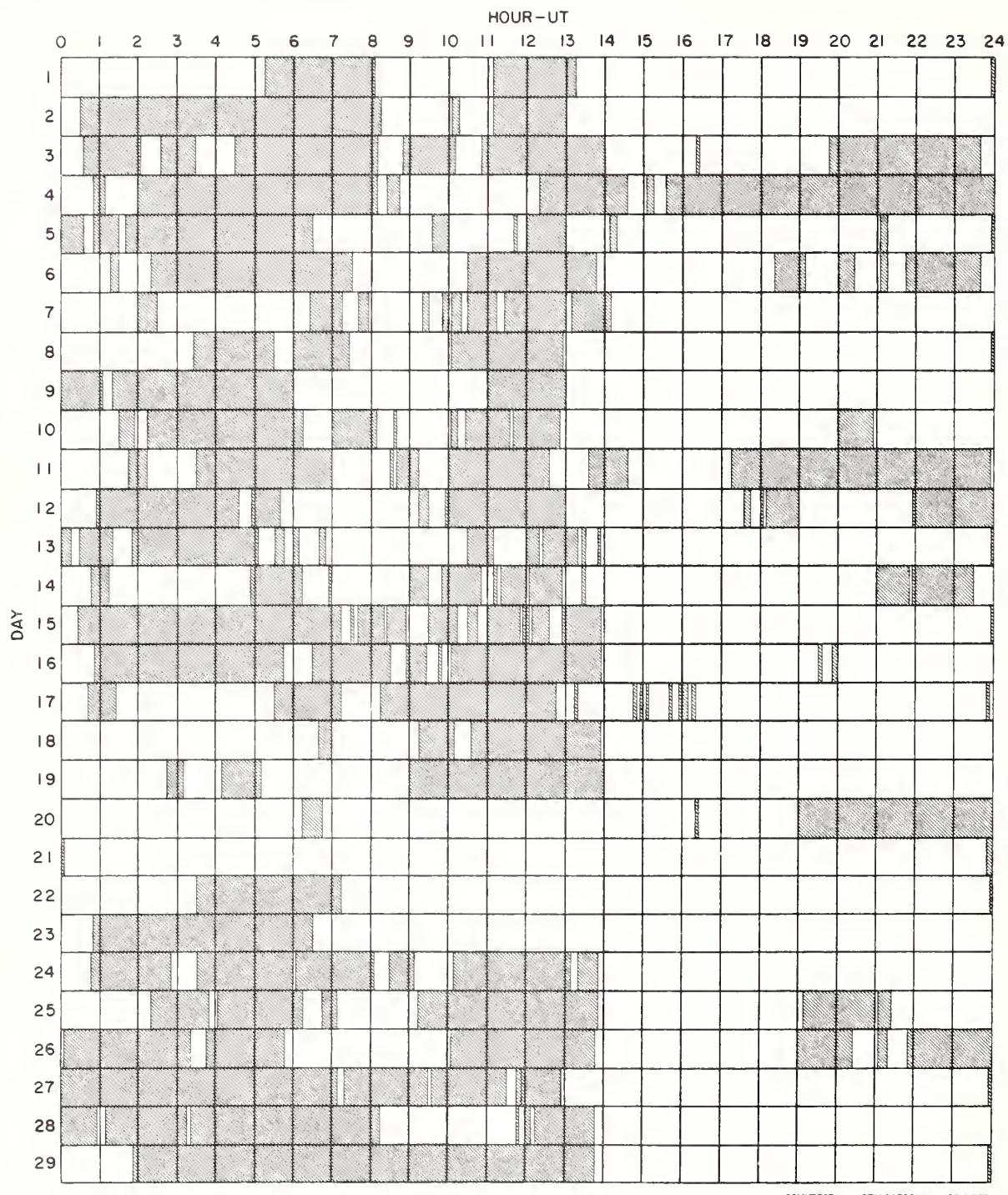
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40),
NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.
COMMERCE - STANDARDS - BUREAU

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

FEBRUARY 1964



COMMERCE - STANDARDS - BOULDER

Observatories Included:

Arcetri	Ikomasan	Manila	Sacramento Peak
Athenes	Istanbul	Ondrejov	Uccle
Huancayo	Locarno	Ottawa	Zurich

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE NOV 1963	OBSERVED UNIVERSAL TIME		LOCATION	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEAS. AREA Sq. Deg.		PROVISIONAL IONOSPHERIC EFFECT
		START	END						MEAS. AREA Sq. Deg.	MAX. INT. Hr.	
UCCLE	01	0045	0110	NO FLARE	PATROL	-	-	-			
	01	0435	0440	NO FLARE	PATROL	-	-	-			
	01	0515	0520	NO FLARE	PATROL	-	-	-			
	01	0945	0940	NO FLARE	PATROL	-	-	-			
	01	1201	1214	NO FLARE	PATROL	-	-	-			
	01	1250	1320	NO FLARE	PATROL	-	-	-			
	02	0250	0625	NO FLARE	PATROL	-	-	-			
	02	0635	0640	NO FLARE	PATROL	-	-	-			
	02	0930	E	0946	S24	w31	□	18 D	2	2	
	02	1029	1052	NO FLARE	PATROL	500	w40	1-			
NIZAMIAH	02	1610	1615	NO FLARE	PATROL	-	-	-			
	03	2130	2155	NO FLARE	PATROL	-	-	-			
	04	0300	0350	NO FLARE	PATROL	-	-	-			
	04	0425	0505	NO FLARE	PATROL	-	-	-			
	04	0600	0650	NO FLARE	PATROL	-	-	-			
	04	0714	E	0710	D	N08	E51	1-			
	04	0720	E	0746	D	500	w65	1-			
	04	0823	E	0857	D	500	w66	1-			
	04	0853	E	0908	D	N08	E55	1-			
	04	0924	E	0949	D	500	w66	1-			
BUCHAREST	04	0943	E	0953	D	N08	E51	1-			
	04	1100	1150	NO FLARE	PATROL	-	-	-			
	04	1155	1230	NO FLARE	PATROL	-	-	-			
	05	0200	0220	NO FLARE	PATROL	-	-	-			
	05	0245	0350	NO FLARE	PATROL	-	-	-			
	05	0430	0625	NO FLARE	PATROL	-	-	-			
	05	0904	0926	NO FLARE	PATROL	N08	E44	1-			
	05	1204	1232	NO FLARE	PATROL	501	w88	1-			
	05	1214	1225	NO FLARE	PATROL	500	w90	1-			
	05	1236	1317	1239	D	501	w88	1-			
UCCLE	06	0010	0045	NO FLARE	PATROL	-	-	-			
	06	0240	0245	NO FLARE	PATROL	-	-	-			
	06	2105	2110	NO FLARE	PATROL	-	-	-			
	06	2200	2220	NO FLARE	PATROL	-	-	-			
	07	0005	0005	NO FLARE	PATROL	-	-	-			
	07	0010	0230	NO FLARE	PATROL	-	-	-			
	07	0235	0240	NO FLARE	PATROL	-	-	-			
	07	0645	0655	NO FLARE	PATROL	-	-	-			
	08	0030	0140	NO FLARE	PATROL	-	-	-			
	10	2355	2400	NO FLARE	PATROL	-	-	-			
UCCLE	11	0005	0345	NO FLARE	PATROL	-	-	-			
	11	0005	0345	NO FLARE	PATROL	-	-	-			

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE NOV 1963	OBSERVED UNIVERSAL TIME		APPROX LAT.	MERC DIST	N-MATH PLAGE REGION	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUR- MENTS		MAX WIDTH H _a	MAX INT %	PROVISIONAL IONOSPHERIC EFFECT
		START	END								MEAS AREA Sq. Deg.	MEAS AREA Sq. Deg.			
KODAK/NL	11	0350	0355	NO FLARE	PATROL										
	12	0245	0250	NO FLARE	PATROL										
	12	0530	0600	NO FLARE	PATROL										
	13	0200	0540	NO FLARE	PATROL										
	13	0550	0600	NO FLARE	PATROL										
	13	1920	1940	NO FLARE	PATROL										
	13	2230	2250	NO FLARE	PATROL										
	13	2310	2320	NO FLARE	PATROL										
	13	2345	2400	NO FLARE	PATROL										
	14	0000	0100	NO FLARE	PATROL										
UCCLE	14	0315	0335	NO FLARE	PATROL	N13 W10									
	14	0345	0435	NO FLARE	PATROL	N13 E88									
	14	0520	D												1•68
	14	0525	0805	NO FLARE	PATROL										
	14	0835	0840	NO FLARE	PATROL										
	14	1055	1100	NO FLARE	PATROL										
	14	1340	1352	NO FLARE	PATROL										
	14	1405	1420	NO FLARE	PATROL										
	14	1425	1430	NO FLARE	PATROL										
	14	1440	1505	NO FLARE	PATROL										
CRIMEA TACHIKENT	14	1530	1535	NO FLARE	PATROL										
	14	1810	1815	NO FLARE	PATROL										
	15	0215	0230	NO FLARE	PATROL										
	15	0300	0310	NO FLARE	PATROL										
	15	0345	0355	NO FLARE	PATROL										
	15	0400	0400	NO FLARE	PATROL										
	15	0435	0535	NO FLARE	PATROL										
	15	1330	1330	NO FLARE	PATROL										
	17	0530	0600	NO FLARE	PATROL										
	17	1005	1020	NO FLARE	PATROL										
COMMERCE	17	1040	1120	NO FLARE	PATROL										
	17	1130	1355	NO FLARE	PATROL										
	17	1400	1425	NO FLARE	PATROL										
	18	0000	0030	NO FLARE	PATROL										
	18	0200	0210	NO FLARE	PATROL										
	18	0300	0600	NO FLARE	PATROL										
	18	1300	1335	NO FLARE	PATROL										
	18	1405	1405	NO FLARE	PATROL										
	19	0000	0230	NO FLARE	PATROL										
	19	0315	0500	NO FLARE	PATROL										
STANDARDS - BOULDER	20	0200	0500	NO FLARE	PATROL	N13 E35	7039	14 D	1	2	0603	3•15		1•80	55
	20	0600	0614	D	O603	N14 E37	7039	13	1	1	0607	1•64	2•00		

SOLAR FLARES

NOVEMBER 1963

OBSERVATORY	DATE	OBSERVED UNIVERSAL TIME			APPROX. LAT.	APPROX. MER. DIST.	DURA- TION MINUTES	IM- POR- TANCE	OBS. COND.	TIME UT	MEASUREMENTS			MAX. WIDTH H _A	MAX. INT. +	PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE							MEAS. AREA Sq Deg	CORR. Sq Deg	MAX. WIDTH H _A			
ABASTUMANI	NOV 1963	20 0602	0608 E	0604	N14	E37	7039	6 D	1	3	2.25	2.94	55			
		20 1640	1650	NO FLARE	PATROL											
		20 1700	1705	NO FLARE	PATROL											
		20 1815	1825	NO FLARE	PATROL											
		20 1935	2000	NO FLARE	PATROL											
		20 2140	2310	NO FLARE	PATROL											
		21 0005	0010 C	NO FLARE	PATROL											
		21 0230	0500	NO FLARE	PATROL											
		21 1410	1415	NO FLARE	PATROL											
		21 1500	1635	NO FLARE	PATROL											
		21 1945	2215	NO FLARE	PATROL											
		21 2255	2335	NO FLARE	PATROL											
ZURICH		22 0215	0420	NO FLARE	PATROL											
UCCLE		22 1043 E	1108	1048	NO6	E53	7047	25 D	1	2	1048	4.00				
		22 1329 E	1343 D	1332	N11	w06		1-		3						
		23 0030	0035	NO FLARE	PATROL											
		23 0230	0250	NO FLARE	PATROL											
		23 0320	0330	NO FLARE	PATROL											
		23 0335	0340	NO FLARE	PATROL											
		23 0450	0455	NO FLARE	PATROL											
NIZAMIAH		23 1046	1059	1052	S03	w52	7036	13	1+	2	1052	3.00				
CAPE TOWN		24 1202	1229	1203	N02	E30		1-								
		25 0000	0220	NO FLARE	PATROL											
		25 0535	0635	NO FLARE	PATROL											
		26 1340	1355	NO FLARE	PATROL											
UCCLE		27 0550	0755	NO FLARE	PATROL											
		27 0822 E	0833 D	No4 w05				1-		3						
CAPE TOWN		28 0425	0500	NO FLARE	PATROL											
CAPE TOWN		28 0749	0755	0750	N05	w17		1-								
CLIMAX		28 1406	1427 D	1407	N01	w28		1-								
		28 2117	2129 D	No8 w40	N15	w90		1-								
		29 0155	0205	NO FLARE	PATROL											
		29 0215	0225	NO FLARE	PATROL											
		29 0330	0500	NO FLARE	PATROL											
CLIMAX		29 1648	1714	1659												
BUCHAREST		30 0220	0600	NO FLARE	PATROL											
		30 1047 E	1109 D	1053	S10	E88		1-		3						
		30 1335	1340	NO FLARE	PATROL											

S1-S-SWF

G-SWF

COMMERCE - STANDARDS - BOULDER

SOLAR FLARES

NOVEMBER 1963

These flare reports are addenda to the November 1963 flares published in CRPL-F 232 B for December 1963.

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NEFRA	NEDERHORST den BERGH,
BAKOU	PIRCULLI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	NETHERLANDS
CAPETOWN	ROYAL OBSERVATORY,	KIEV KO	KIEV GAO, USSR	SAC PEAK	KRASNAYA PAKHRA, USSR
	CAPE OF GOOD HOPE	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBÄDEN	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUNIS	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	MCMATH	MCMATH-HUBERT	TACHKENT	SCHAUTINS LAND, GFR
CRIMEE	SIMEIZ, USSR	PONTIAC	PONTIAC, MICH., USA	WENDEL	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY,	MOSCOW	MOSCOW-GAISH, USSR	WENDELSTEIN, GFR	WENDELSTEIN, GFR
HTR-PROVEN	HERSTMONCEUX, ENGLAND		NEW SCHAUIN FREITBURG, GFR		
	HAUTE-PROVENCE				

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

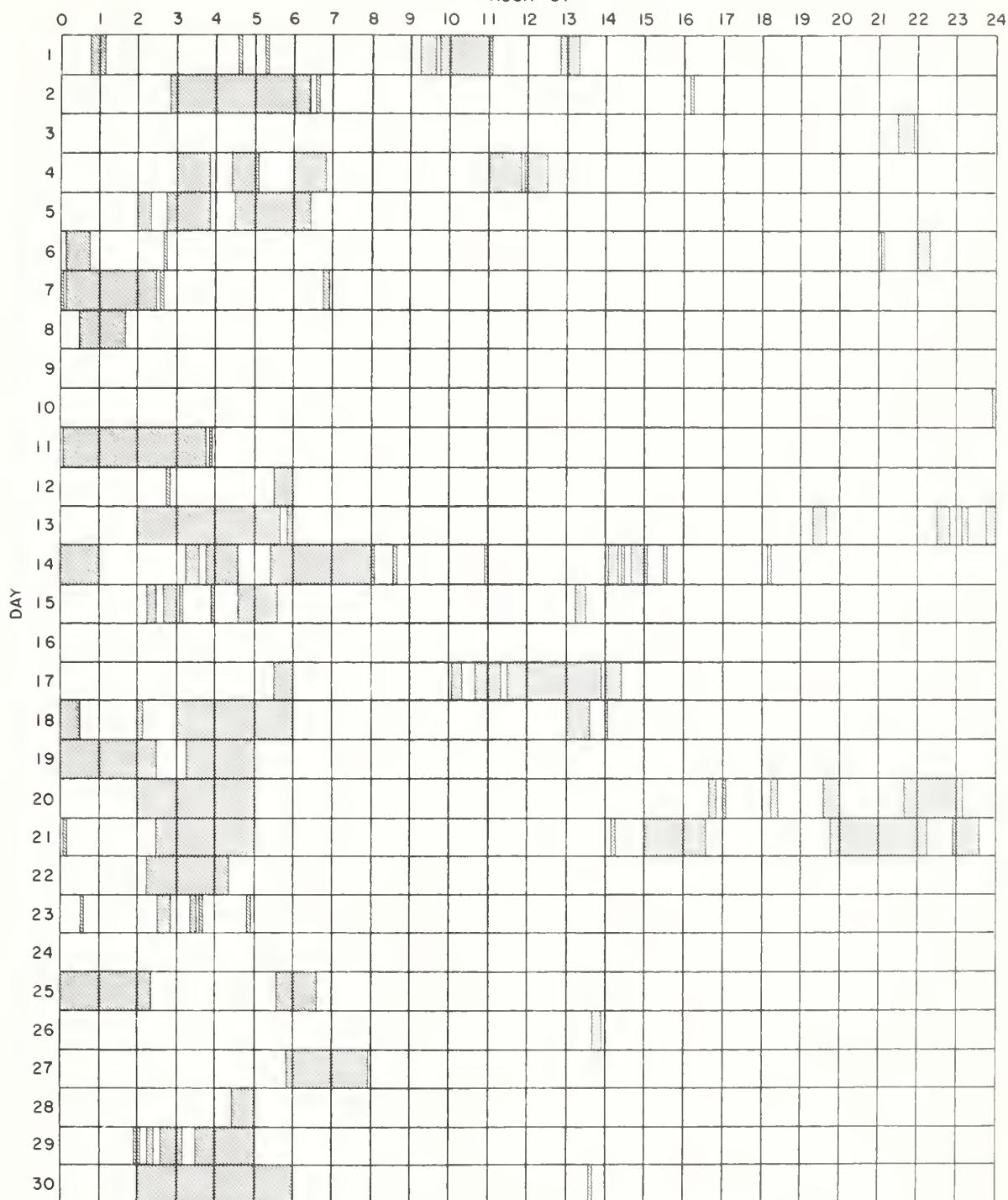
COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

III

NOVEMBER 1963

HOUR-UT



COMMERCE - STANDARDS - BOULDER

Observatories Include:

Abastumani	Capetown	Haute-Provence	Kiev-KO	Nizamiah	Tackhent
Arcetri	Capri-F (German)	Herstmonceux	Kodaikanal	Nizmir	Uccle
Athenes	Capri-S (Swedish)	Huancayo	Lockheed	Ondrejov	Voroshilov
Bakou	Climax	Ikomasan	McMath-Hulbert	Ottawa	
Bucharest	Crimee	Istanbul	Mitaka	Sacramento Peak	

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS SUDDEN PHASE ANOMALIES
SUDDEN COSMIC NOISE ABSORPTION SUDDEN ENHANCEMENTS OF SIGNAL
SUDDEN ENHANCEMENTS OF ATMOSPHERICS SUDDEN FREQUENCY DEVIATIONS
SOLAR NOISE BURSTS AT 18 Mc/s

JANUARY 1964

JAN. 1964	UNIVERSAL TIME			TYPE SWF IMP	IMPORTANCE					BUR	WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SONA	SEA	SPA	SES				
No sudden ionospheric disturbances for January 1964.													

COMMERCE - STANDARDS - BOULDER

RIOMETER EVENTS
(Provisional)

IIIa

JANUARY 1964

South Pole

26 Mc/s

JAN. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS	JAN. 1964	START UT	END UT	MAX. UT	MAX. ABSORP. db, (tenths)	NO. OF PEAKS
2	0441	0528	0447	11	1	17	0805	1918	1541	9	2
2	0732	1458	1305	17	5	18	0159	0434	0217	13	2
2	1848	1952	1909	3	3	18	0938	1125	0959	4	1
3	0204	0355	0243	35	5	19	1450	1709	1604	12	1
3	0819	1611	1412	10	5	20	1021	1744	1431	5	2
3	1819	1950	1845	6	3	24	0341	0444	0358	7	2
4	0006	0345	0245	24	5	24	0946	2328	1446	7	2
4	1246	2008	1555	12	4	25	0044	0158	0109	10	2
6	0230	0359	0249	11	3	25	0602	0722	0613	4	1
7	0932	1624	1032	6	4	25	1857	1949	1940	3	1
7	1831	1941	1915	4	4	26	0212	0314	0220	13	1
8	0016	0054	0026	6	4	26	1241	2124	1950	6	4
9	0100	0204	0117	8	1	27	0116	0205	0133	23	2
9	1010	1019	1018	3	1	28	1916	1947	1932	5	1
10	0016	0217	0110	7	1	29	0620	1930	0958	10	3
10	0544	0742	0552	15	1	30	0304	0529	0311	5	3
10	1519	1744	1625	5	2	30	0740	1830	1434	12	3
10	2247	0107	2255	17	3	31	0856	2028	1105	23	2
11	1943	0308	0032	18	3						
13	0249	0800	0256	7	2						
14	0023	0126	0116	5	1						
15	0106	0133	0127	3	2						
16	0944	1230	1204	9	3						
16	2257	2309	2301	3	1						
17	0244	0324	0248	13	1						

COMMERCE - STANDARDS - BOULDER

**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

FEBRUARY 1964

ARO - OTTAWA

2800 Mc/s

FEB. 1964	U R A N E	DESCRIPTIVE TYPE	START UT	DURATION HRS. MIN.	MEAN FLUX	MAXIMUM		REMARKS
						TIME	FLUX	
23	3	Simple 3	1822	11	1826	1	0.5	
23	3	Simple 3	1934	>26	1941	1.5	0.7	
28	3	Simple 3	1401	42	1410	2	1	
28	3	Simple 3	1531	1 36	Indet.	1	0.5	
28	3 1	Simple 3 A Simple 1	1734 1851	2 16 0.8	Indet. 1851.2	1 2	0.5 1	

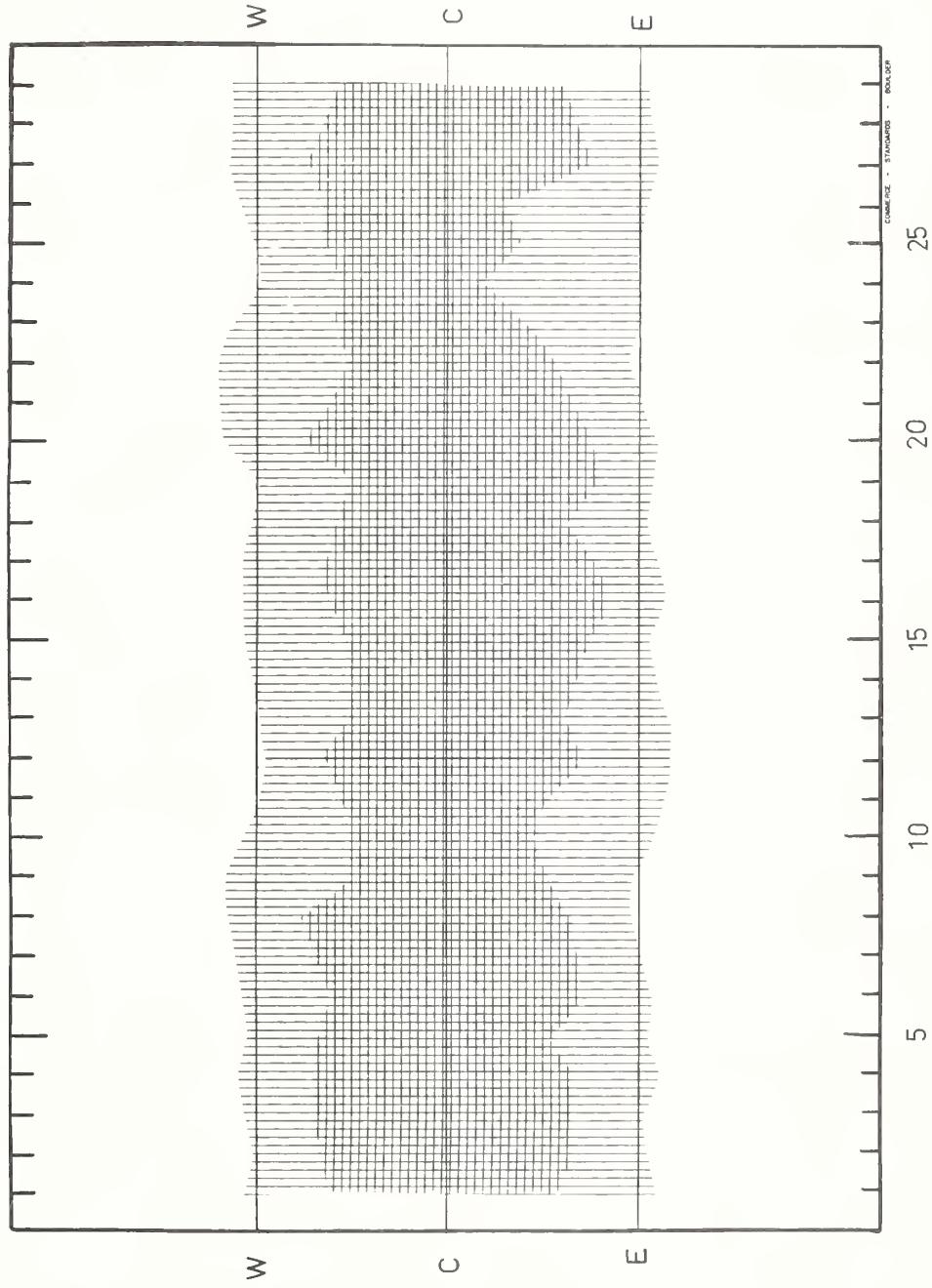
COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

NANQAY

FEBRUARY 1964

169 Mc/s



FEBRUARY 1964

IVb

**SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES**

FEBRUARY 1964

NBS BOULDER

108 Mc/s

No Outstanding Occurrences were observed during February 1964.

NOMINAL TIMES OF OBSERVATION

FEBRUARY 1964

NBS BOULDER

108 Mc/s

Feb. 1964	HOURS OF OBSERVATION	UT	Feb. 1964	HOURS OF OBSERVATION	UT
1	1414-0004		16	1357-0022	
2	1413-0005	1636-1825	17	1356-2326	
3	1412-0006		18	1605-0024	
4	1411-0008	1711-1726	19	1353-0025	
5	1410-0009		20	1352-0026	
6	1409-0010		21	1350-0028	
7	1408-0011		22	1349-0029	
8	1407-0012		23	2230-0030	
9	1406-0014		24	1346-0031	
10	1404-0015		25	1345-0032	
11	1403-0016		26	1343-0033	
12	1402-0017		27	1342-0034	
13	1401-0018		28	1340-0036	2025-2040
14	1400-0019		29	1339-0037	1745-1758
15	1358-0021	1520-1529; 1805-1826			

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

IVd

FEBRUARY 1964

High Altitude Observatory
Boulder

7.6-41 Mc/s

Date FEB. 1964	Bursts			Frequency Range (Mc/s)
	Type	Time (U.T.)	Intensity	
14 Feb	III	1627:30-1628	1-	26-41
23	II	1902:45-1915:45	1	19-37
29	III	1745-1746:45	1	22-40
	III	1752-1752:15	1-	32-40

COMMERCE - STANDARDS - BOULDER

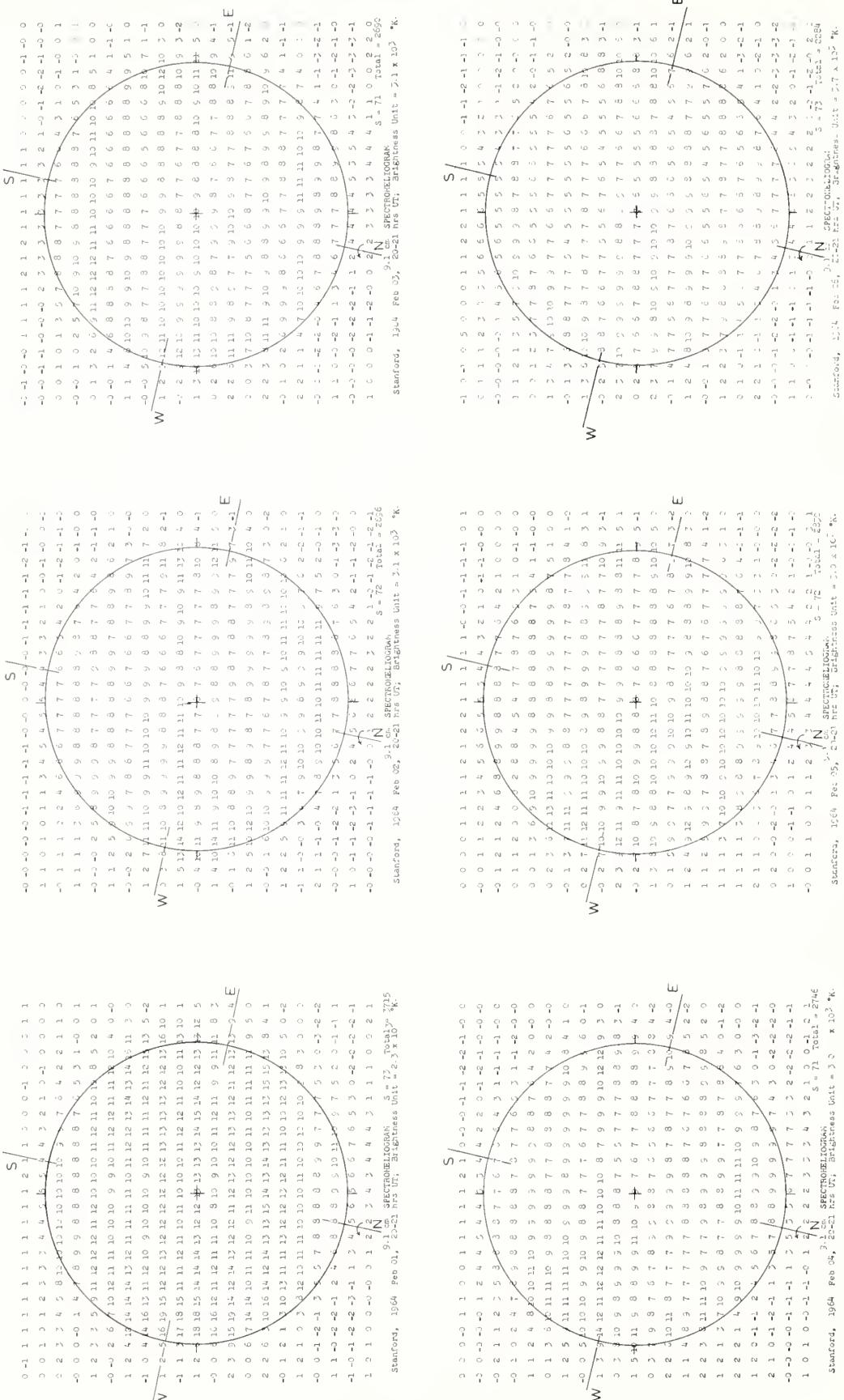
Beginning with February 1964, the Boulder spectrographic data times are given in hours, minutes and seconds to the nearest 15 seconds.

SOLAR RADIO EMISSION SPECTROHELIograms

FEBRUARY 1964

STANFORD

9.1 cm

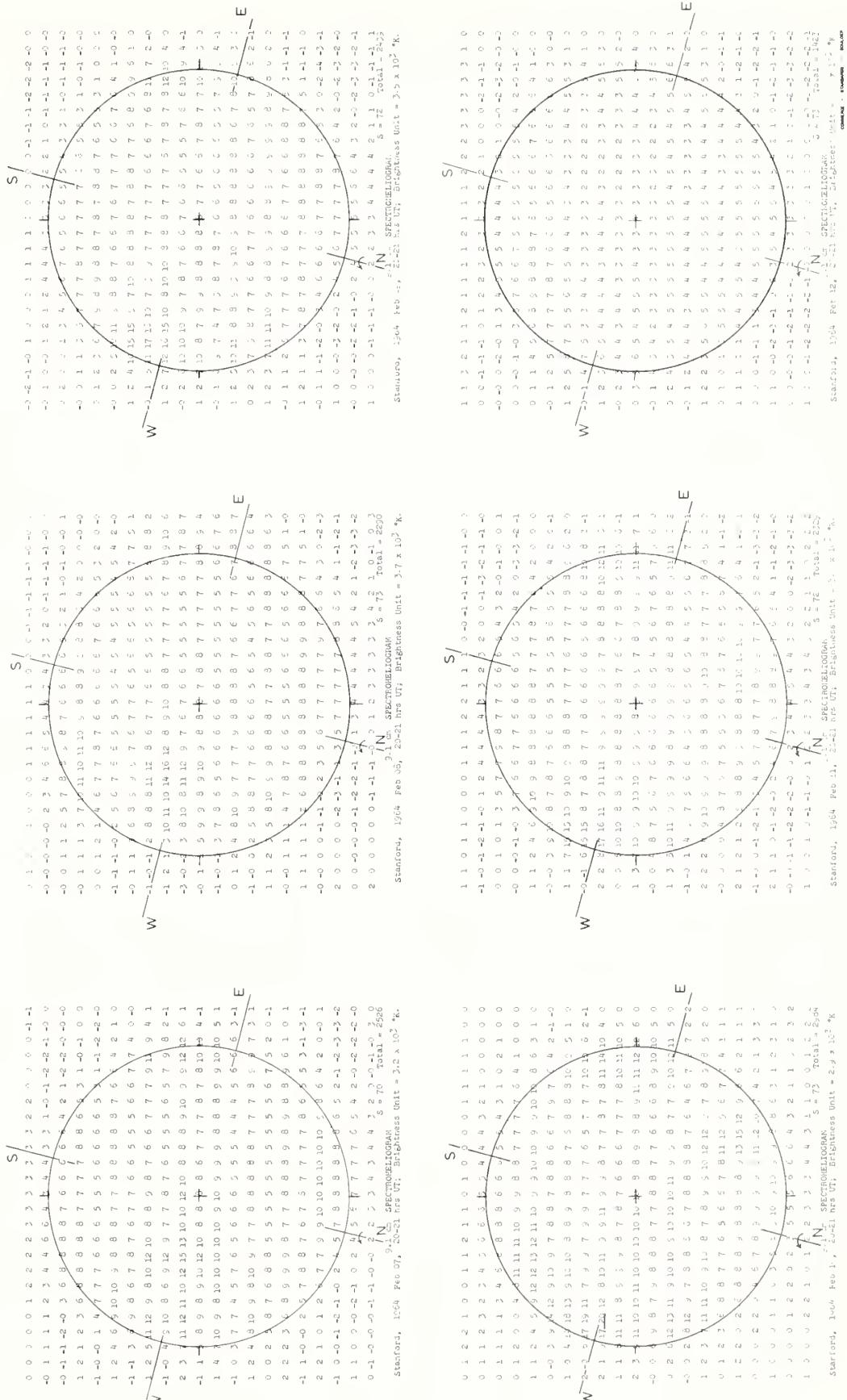


SOLAR RADIO EMISSION SPECTROHELIograms

FERBRIANBY 1964

STANFORD

91 cm

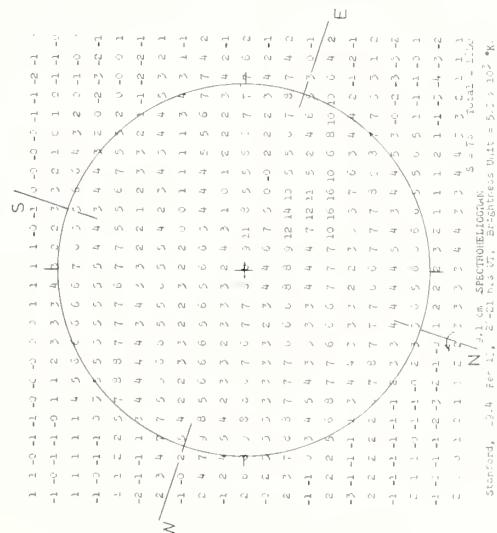


SOLAR RADIATION EMISSION SPECTROHELIOPHOTOGRAMS

FEBRUARY 1964

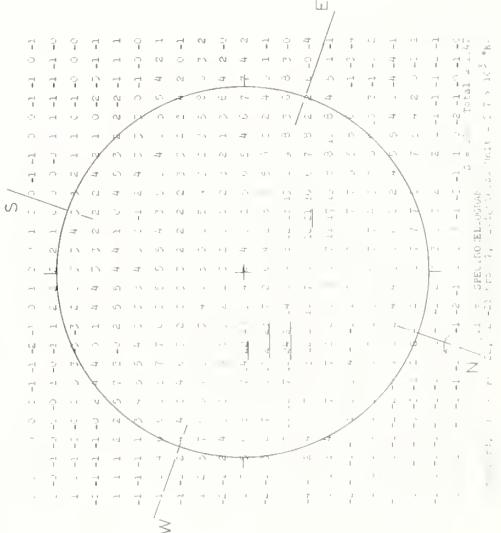
STANFORD

9.1 cm

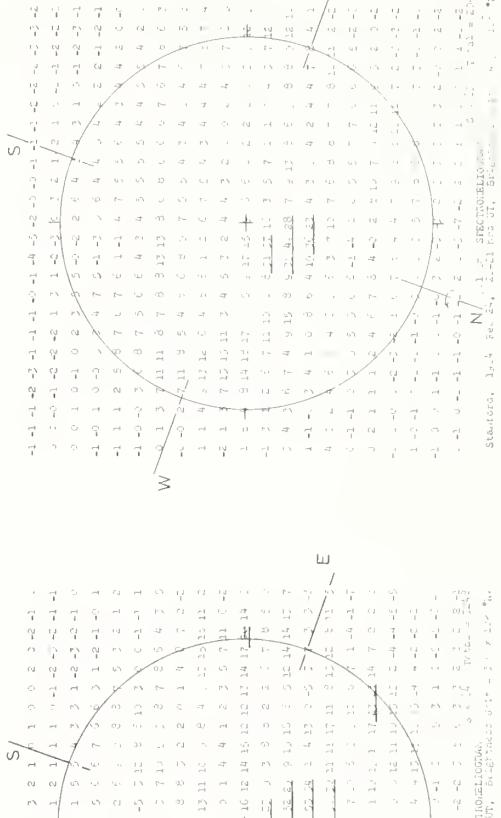


Stanford, -0.4; N, 1.1 cm, SPECTROHELIOPHOTOGRAM, Brightness Unit = 5.2×10^{-4} K.

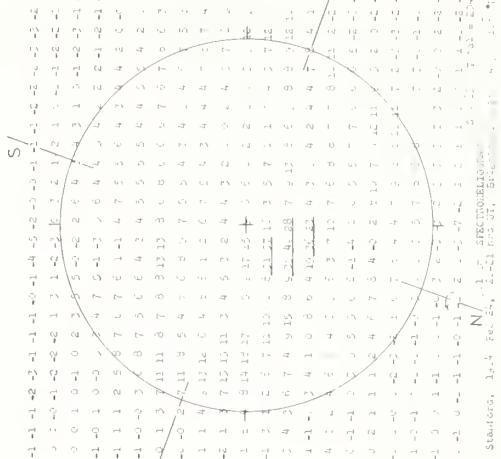
1964 FEBRUARY 21



Stanford, -0.4; N, 1.1 cm, SPECTROHELIOPHOTOGRAM, Brightness Unit = 5.2×10^{-4} K.



Stanford, -0.4; N, 1.1 cm, SPECTROHELIOPHOTOGRAM, Brightness Unit = 5.2×10^{-4} K.



Stanford, -0.4; N, 1.1 cm, SPECTROHELIOPHOTOGRAM, Brightness Unit = 5.2×10^{-4} K.

SOLAR RADIO EMISSION SPECTROHELIOPHYSICS

ESTATE 196

STANFORD

Difficulty was experienced with the antenna during February resulting in maps of widely varying brightness. Coupled with this, there was a receiver malfunction on some days resulting in non-uniform brightness over a single map. Maps could not be obtained on February 17 and February 21.

Va

COSMIC RAY INDICES
(Climax Neutron Monitor)
IGC Station B 305

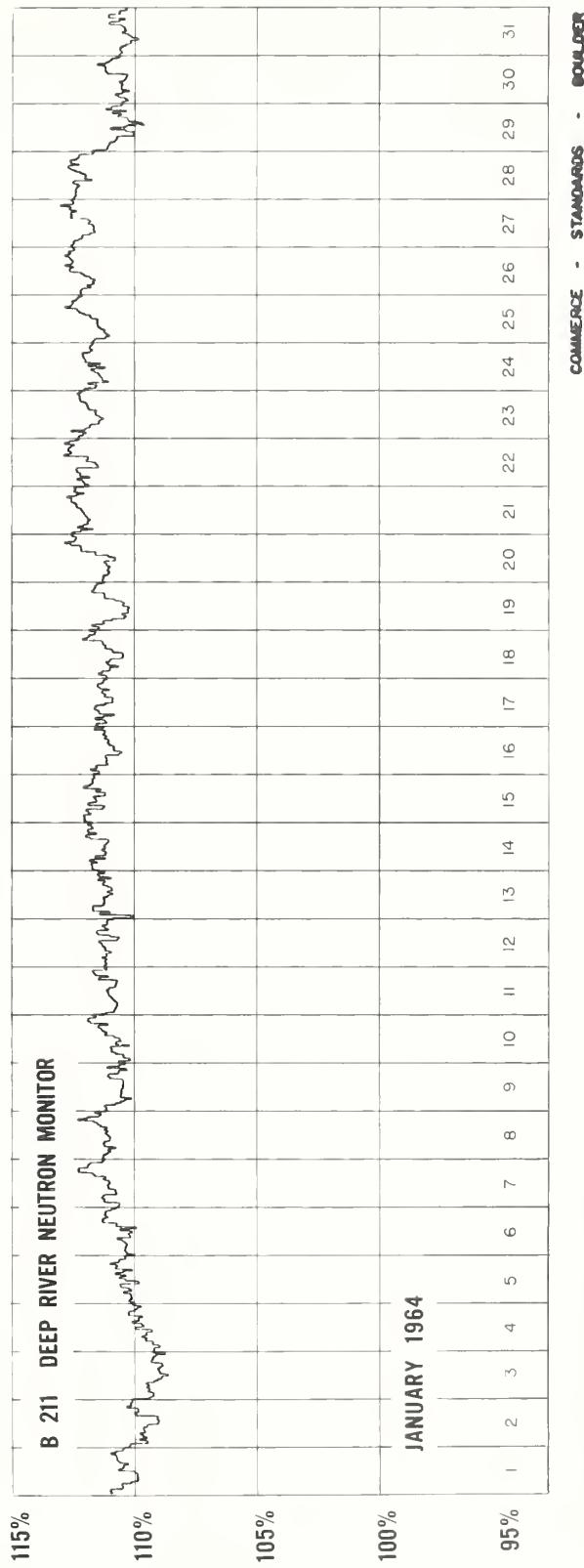
JANUARY 1964

Jan. 1964	Daily average counts/hr*	Jan. 1964	Daily average counts/hr*
1	3224.4	16	3244.3
2	3227.2	17	3246.1
3	3196.4	18	3251.9
4	3198.7	19	3255.5
5	3214.0	20	3239.7
6	3230.0	21	3258.4
7	3259.6	22	3272.8
8	3255.2	23	3263.4
9	3231.4	24	3254.2
10	3225.8	25	3236.8
11	3238.2	26	3238.7
12	3233.2	27	3243.2
13	3243.6	28	3245.8
14	3252.8	29	3227.3
15	3256.1	30	3219.8
		31	3210.0

* Scaling Factor 128

COMMERCE - STANDARDS - BOULDER

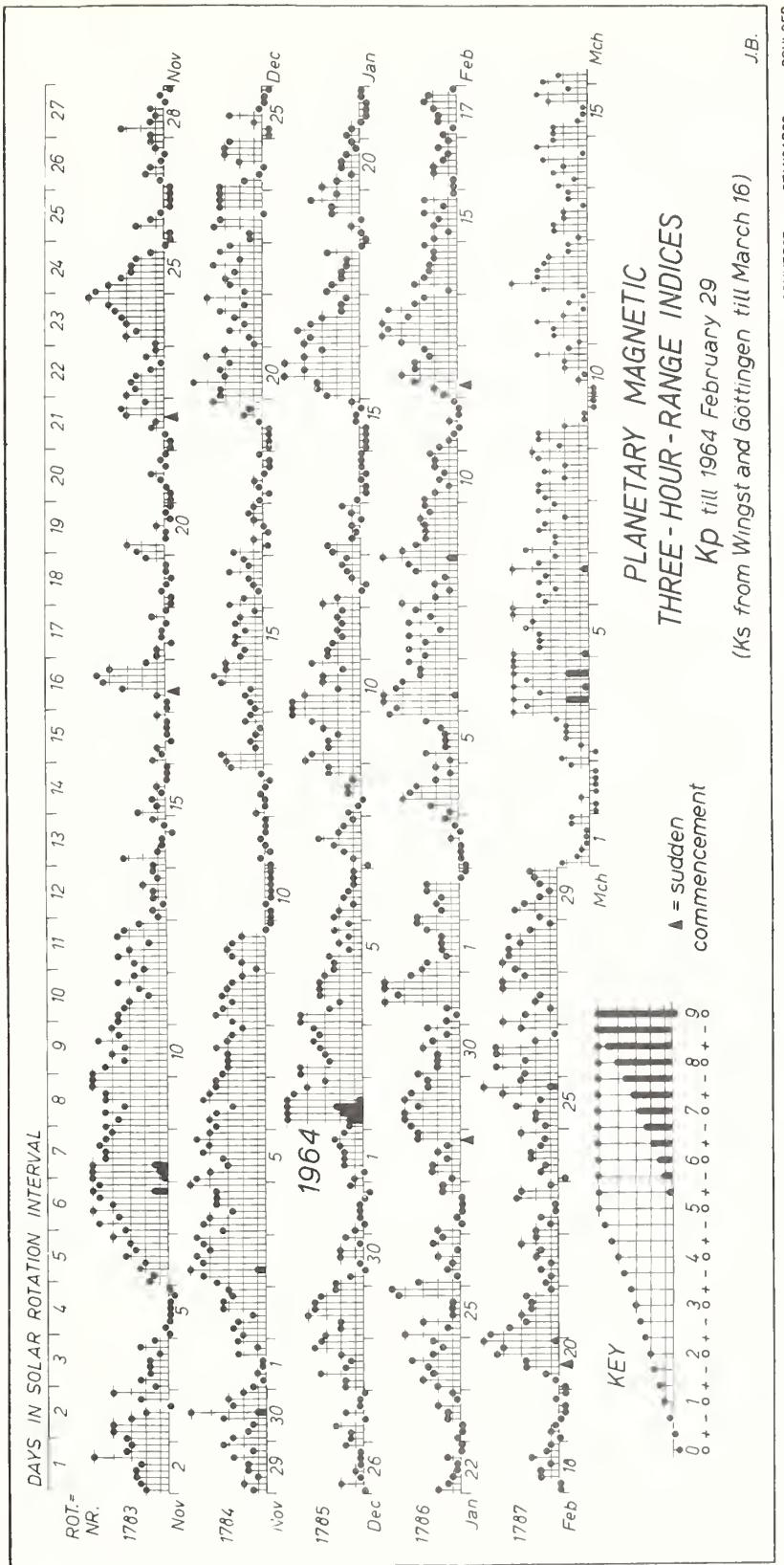
COSMIC RAY INDICES
(Pressure Corrected Hourly Totals)



GEOMAGNETIC ACTIVITY INDICES

JANUARY 1964

Jan. 1964	C	Values Kp								Sum	Ap	Final Selected Days			
		Three hour Gr. interval													
		1	2	3	4	5	6	7	8						
1	0.4	1o	0+	2-	2-	2-	2o	2+	2-	12+	6	Five Quiet			
2	1.6	1+	6o	6+	7-	5+	5-	4o	3o	37+	53				
3	1.1	4+	4+	3-	3o	3+	4-	3+	4-	28+	21				
4	0.9	4+	4+	3-	2o	3+	3+	3+	3o	26+	19	14			
5	0.4	2+	2+	3-	1+	2o	1+	2+	1+	16-	8	15			
												21			
6	0.1	2+	2o	1o	2-	1+	1o	1o	1o	11+	5	22			
7	0.5	0o	1o	2-	2+	3+	2o	2-	1o	13o	7	27			
8	0.5	1+	1-	0+	1+	1+	1o	3-	3-	11+	6				
9	1.1	4o	4-	3-	3-	2o	3o	4-	5-	26+	20				
10	1.0	5-	5-	4o	2o	3o	3o	2-	4-	27-	21				
11	0.2	3-	3-	2+	2-	2o	2-	2o	2-	17-	8	Five Disturbed			
12	0.2	3o	2o	0+	0o	1o	1+	2-	1+	11-	6				
13	0.1	2+	3-	1o	1-	1o	0+	1o	2-	11-	6				
14	0.0	1-	0o	0o	0+	0o	0+	0+	0+	2o	1	2			
15	0.0	0o	0o	0o	0o	1-	1-	0+	1o	3-	2	3			
												10			
16	1.2	3-	3+	3+	5o	4o	5o	4o	3o	30+	27	16			
17	0.6	4o	4-	4+	4-	3o	2-	2-	1+	23+	17	31			
18	0.5	3-	2+	2-	2-	1+	1+	3-	0+	14o	7				
19	0.5	0o	0+	1o	0+	2+	2+	4-	2o	12o	7				
20	0.2	3o	2o	1o	2-	2-	1+	1-	1o	12+	6				
21	0.0	1+	1o	0+	0o	0o	0o	0+	0+	3+	2	Ten Quiet			
22	0.1	2o	1+	1o	1-	1-	1+	0+	0+	8-	4				
23	0.3	1-	0+	0+	1+	1+	2o	1-	1o	8-	4				
24	0.9	2o	3o	2+	3-	4-	2+	2-	2+	20o	11	6			
25	1.0	4o	1+	3o	1o	1o	1o	4+	5-	20+	16	8			
												12			
26	0.4	3+	1-	1+	1o	2o	1-	2+	2-	13o	7	13			
27	0.3	2o	0+	1-	0+	0+	0+	2-	2-	7+	4	14			
28	0.7	1o	2+	2+	1+	2o	1+	3+	3+	17o	9	15			
29	1.1	4-	4o	4o	3+	4o	4-	3-	3-	28o	21	21			
30	0.6	3+	2o	2o	2o	3o	2+	1+	3-	19-	10	22			
31	1.2	1+	1-	1+	5o	4+	5o	5o	4-	26+	26	23			
												27			
Mean:	0.57									Mean:	12				



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

JANUARY 1961

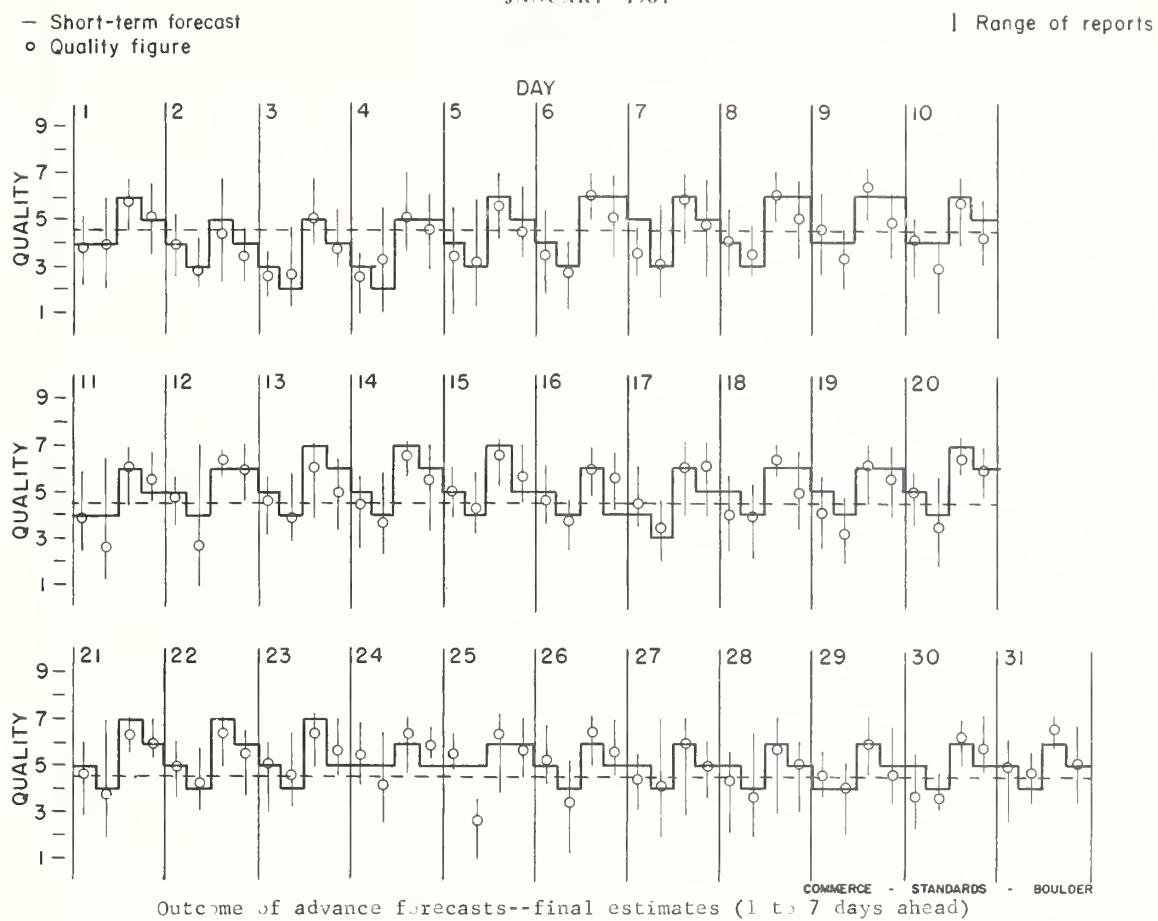
NORTH ATLANTIC

NORTH PACIFIC

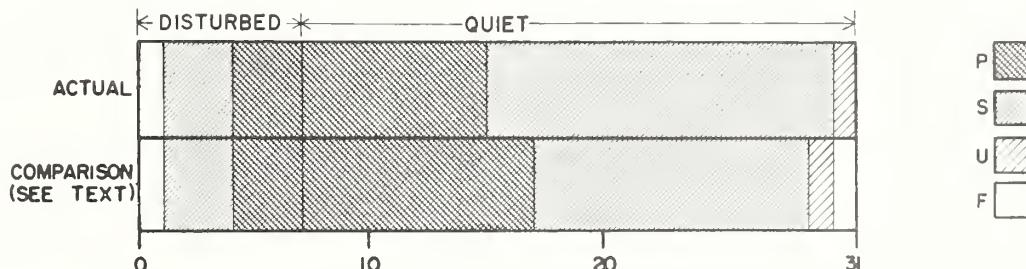
JAN 1961	NORTH ATLANTIC						NORTH PACIFIC					
	6-HOURLY QUALITY FIGURES			SHORT-TERM FORECASTS ISSUED AHEAD ONE HOUR IN ADVANCE OF:			NORTH PACIFIC			NORTH PACIFIC		
	00	06	12	18	00	06	12	18	03	11	19	03
01	4-	40	6.0	5+	4	4	6	5	5-	4	6	7
02	40	3.0	4+	3+	4	3	5	4	(4-)	4	6	6
03	3-	3.0	5.0	4-	3	2	5	4	(4-)	4	5	5
04	2+	3+	5+	5-	3	2	5	5	(4.0)	4	3	3
05	3+	3.0	6-	4+	4	3	6	5	(4+)	5	2	2
06	3+	3-	6+	5.0	4	3	6	6	(4+)	5	2	1
07	4-	3.0	6.0	5-	5	3	6	5	(4+)	6	2	1
08	40	4-	6-	5+	4	3	6	6	5-	6	2	0
09	4+	3+	6+	5.0	4	4	6	6	5-	5	2	3
10	4+	3.0	6-	4+	4	4	6	5	(4+)	5	5	5
11	4.0	3-	6.0	6-	4	4	6	5	5-	5	4	2
12	5-	3-	6+	6.0	5	4	6	6	5-	6	1	1
13	5-	4.0	6.0	5.0	5	4	7	6	5-	6	1	1
14	4+	4-	7-	6-	5	4	7	6	5-	6	0	0
15	5.0	4+	7-	6-	5	4	7	6	5+	0	0	0
16	5-	4-	6.0	6-	5	4	6	5	5-	5	6	6
17	4+	3+	6.0	6.0	4	3	6	5	5-	5	5	3
18	4.0	4-	6-	5.0	5	4	6	6	5-	5	5	(4)
19	4.0	3+	6+	6-	5	4	6	6	5-	5	5	2
20	5.0	3+	6+	6.0	5	4	7	6	5+	0	2	1
21	5-	4-	6+	6.0	5	4	7	6	5+	1	0	1
22	5.0	4+	6+	6-	5	4	7	6	5+	0	4	0
23	5.0	5-	6+	6-	5	4	7	6	5-	0	0	0
24	6-	4.0	6+	6.0	5	5	6	6	5-	1	2	2
25	6-	3-	6+	6-	5	5	6	6	5-	2	2	2
26	5+	3+	7-	6-	5	4	6	5	5+	1	1	1
27	4+	4.0	6.0	5.0	5	4	6	5	5-	1	1	2
28	4+	4-	6-	5+	5	4	6	5	5-	4	4	2
29	5-	4.0	6.0	5-	4	4	6	5	5-	3	3	3
30	4-	4-	6+	6.0	5	4	6	5	5-	4	5	2
31	5.0	5-	7-	5+	5	4	6	5	5+	4	2	(4)
Score: Quiet Periods	P	10	0	23	14		8	9	15	15	16	11
	S	3	2	7	12						9	12
	U	0	0	0	0		1	1	0	0	0	1
	P	0	0	0	1		0	0	0	0	2	1
Disturbed Periods	P	8	17	0	1		3	3	3	3	0	0
	S	10	11	1	3		3	3	3	3	0	0
	U	0	1	0	0		0	0	0	0	2	0
	F	0	0	0	0		1	1	1	1	0	2

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS VIII
NORTH ATLANTIC

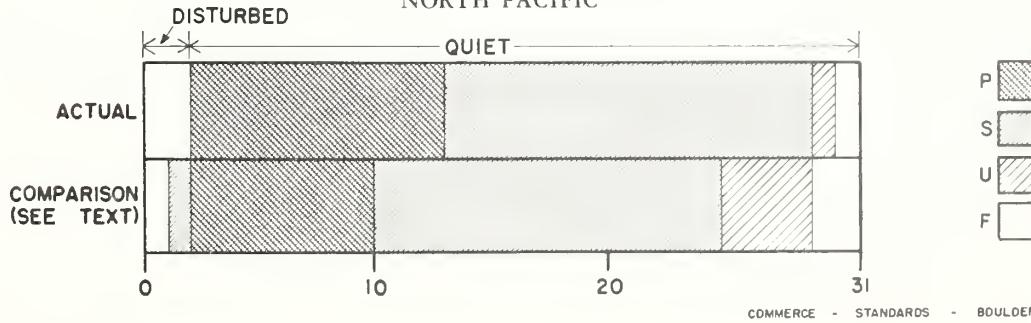
JANUARY 1964



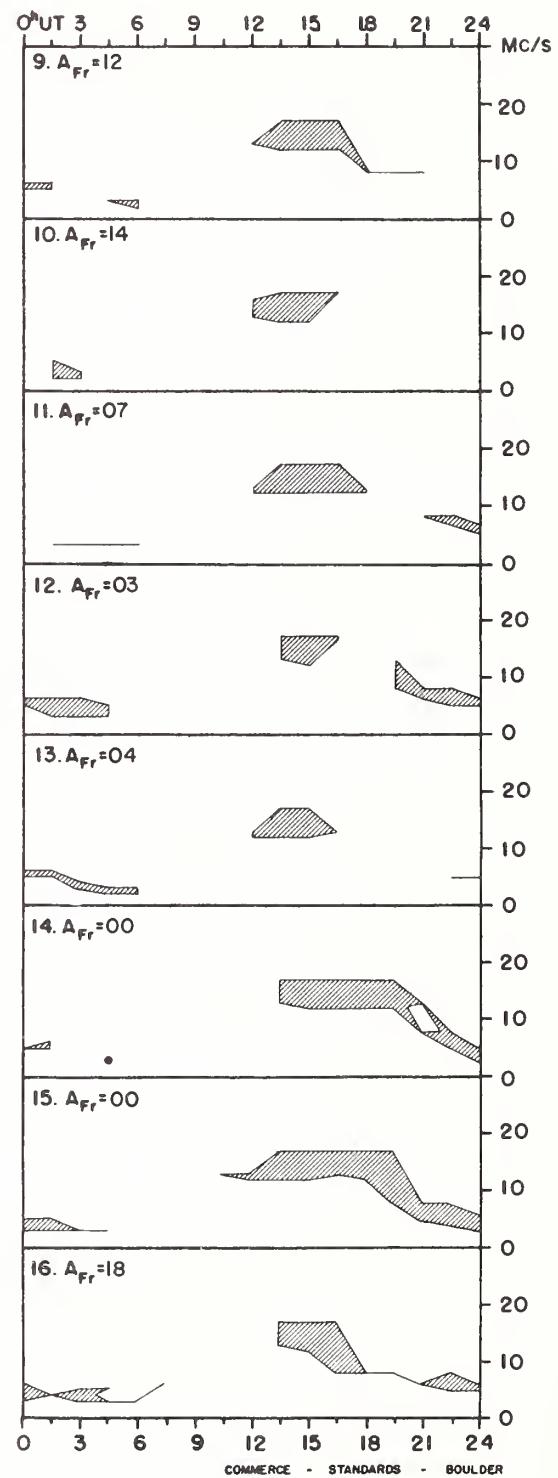
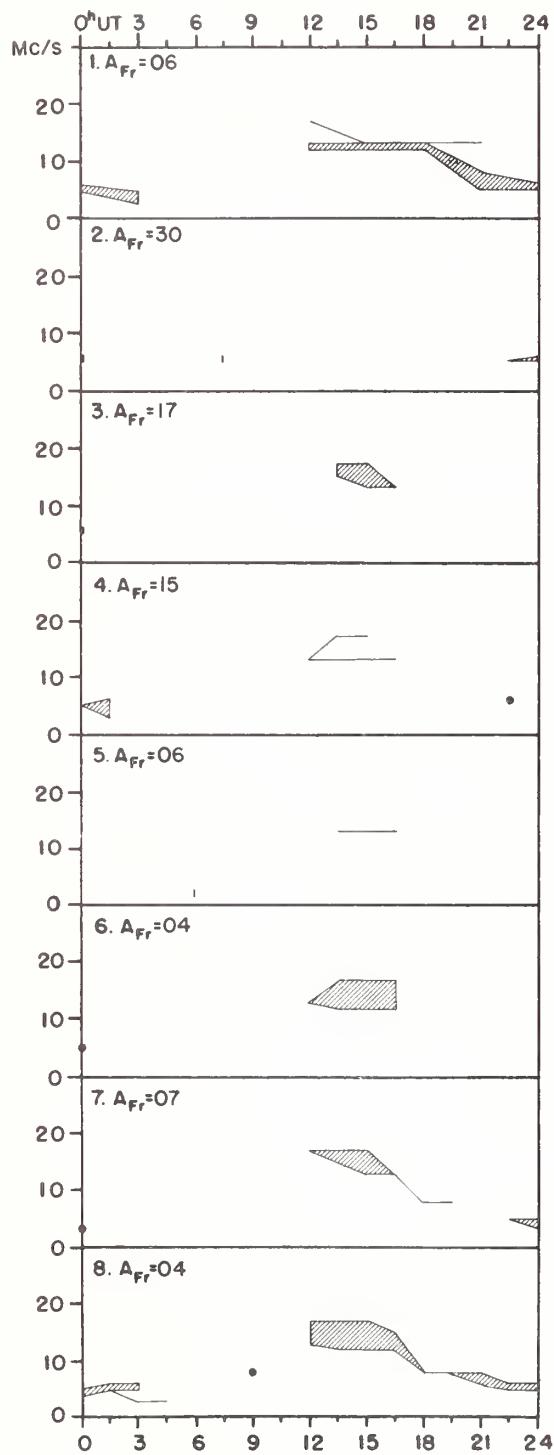
NORTH ATLANTIC



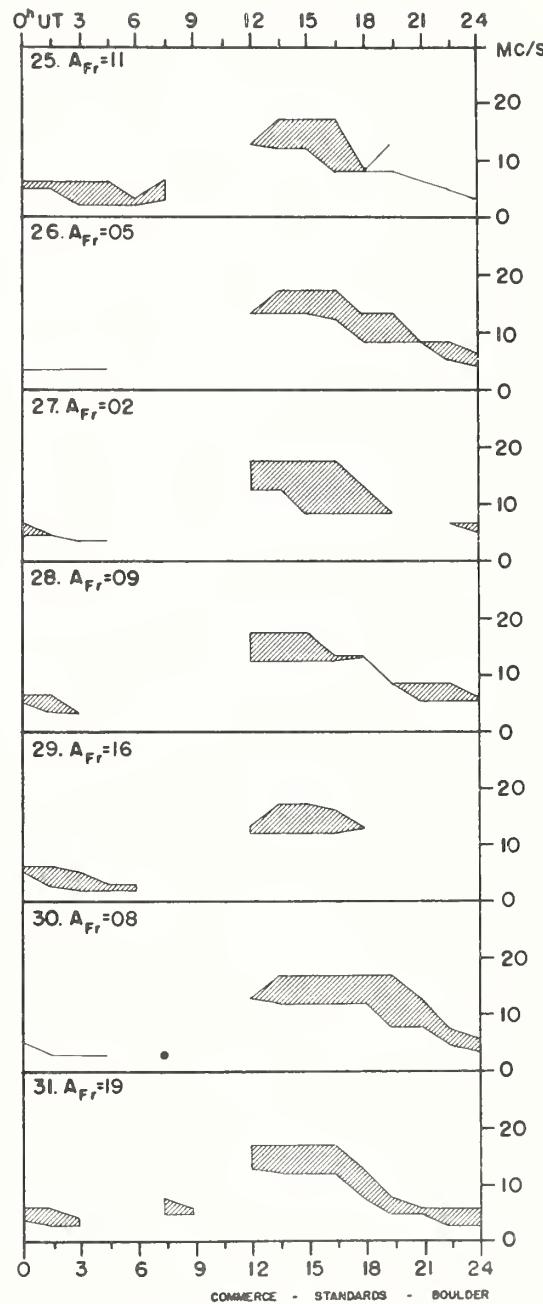
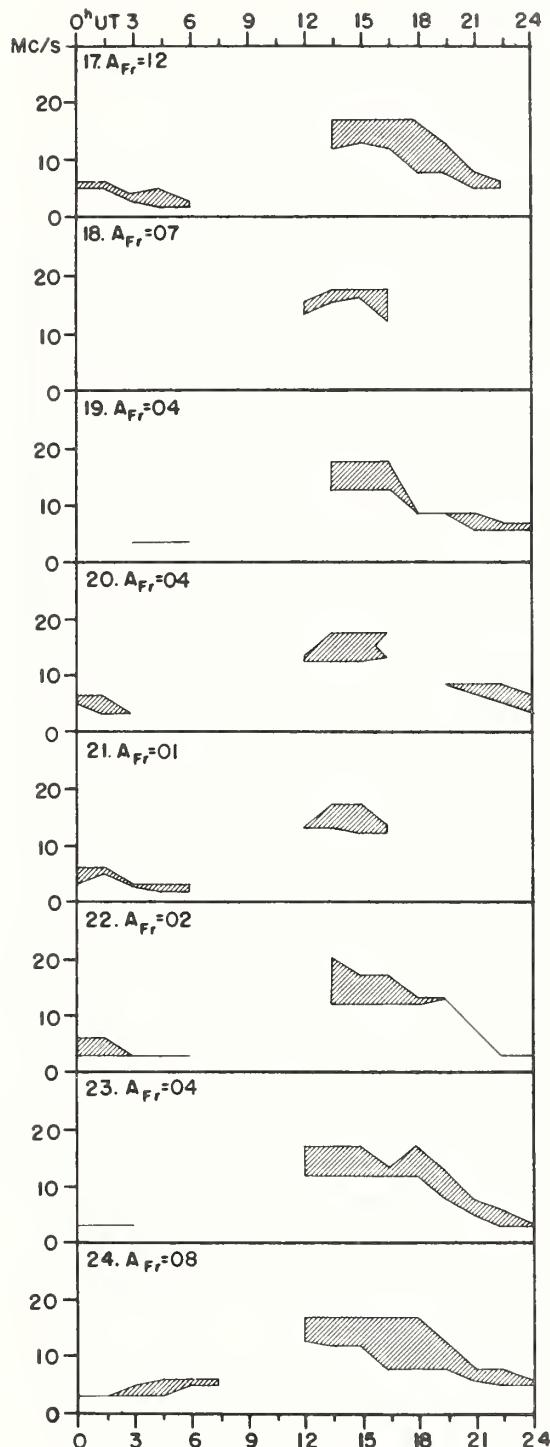
NORTH PACIFIC



JANUARY - 1961



JANUARY 1964



COMMERCE - STANDARDS - BOULDER

Adapted from Observations by Deutsches Bundespost

IQSY ALERT PERIODS
INTERNATIONAL URSIGRAM
AND WORLD DAYS SERVICE

FEBRUARY 1964

FEB 1964	TIME OF ISSUE UT	ADVANCE GEOPHYSICAL ALERT	WORLDWIDE GEOPHYSICAL ALERT			
			NO.	TYPE	TIMING	ELABORATION
4	0400		34	Solar Calm	Exists	
13	1825	Ft. Belvoir, Magnetic Storm 13/03XXZ				
20	0400		35	Magnetic Calm	Exists	
23	0400		36	Solar Activity	Exists	
24	0400		37	Solar Activity	Exists	
25	0400		38	Solar Activity	Exists	

COMMERCE - STANDARDS - BOULDER

On dates not listed above, the World-Wide Alert message was "IQSY GEOALERT NIL".

